

ABSTRACT

An implantable drug delivery system includes an infusion pump assembly with a fluid outlet, a fluid delivery pathway extending from the pump outlet to a target tissue site; and a controlled release material unit positioned in the fluid delivery pathway to release a drug or bioactive material into the delivery pathway. The pump assembly delivers fluid as a high flow infusion flow in said pathway, entraining drug material released by the release unit and establishing a pressure gradient at the distal end of the pathway that results in convection-enhanced transport such that the released drug(s) or treatment material enter the target tissue site with enhanced penetration depth and/or concentration. The pump delivers a carrier fluid that may reside in an external or in an implanted reservoir, or that may be an endogenous fluid, such as plasma or CSF.

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